

REMARKS

Applicant thanks the Examiner for the allowance of claims 1-38, 44-59, and 65-79.

The Examiner rejects claims 60-64 under 35 U.S.C. § 102(b) as being anticipated by Japanese document (404235831) and German document (DE 2745928).

Applicant respectfully traverses the Examiner's rejections.

Neither the Japanese nor German documents teach or suggest at least the following italicized features:

60. An excavator, comprising:
 - a boom;
 - a cutter head, mounted on the boom, for excavating *in situ* material;
 - a body;
 - a plurality of grippers operable to apply pressure against opposing surfaces of an excavation to hold the body in a selected position and orientation; and
 - an optimization module operable to monitor a selected excavation parameter and effect a change in the operation of the cutter head when the monitored selected excavation parameter one of exceeds or falls below a predetermined threshold, wherein the selected excavation parameter comprises a grade of a material removed during cutter head operation.*

The Japanese document teaches an operating method to deliver a *fixed* quantity of a bulk material in cargo handling by a circulating bucket, such as an unloader, and a reclaimer. To accomplish this result space between a specified height of a circulating excavation bucket when it separates from a pile of bulk material and the surface of the excavated material in the bucket is measured. A fulcrum of the bucket is positioned on an upper point of the position where the bucket separates from a pile of the bulk material. A calculation is made of the comparison value between the excavated quantity of the bulk material inside of the bucket, which is calculated from the measurement value of the detector, and the set excavation quantity of the control device. The Japanese document says nothing about measuring or detecting a grade of the bulk material let alone using the grade as an input parameter in controlling bucket operation.

The German document is directed to a control unit, for advancing a tunneling or shield-driving machine, has a sensor for detecting the *amount* of excavation or mud worked out in unit time from a working face (48) as the shield mantle (10) is advanced. A second sensor determines the *amount* of such material conveyed in unit time from the working chamber. A comparator compares the two values and produces a signal, which represents the difference between them. The control unit of the drive is regulated so as to adjust the *amounts* of material

being removed so that mining operations can proceed smoothly. The German document says nothing about measuring or detecting a grade of the excavated material let alone using the grade as an input parameter in controlling driving machine operation.

Based on the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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